An Indigenous Concept of Innovation? The Case of the Technology Sector in Egypt

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TABLE OF CONTENTS

1. INTRODUCTION 4

2. LITERATURE REVIEW 8

2.1 Innovation in the Socio-Historical Perspective 10

2.1.1 Innovation in the Western perspective 11

2.1.2 Innovation in the Arab Muslim perspective 15

2.2 Economic Theories of Innovation: Western Development and non-Western Catching up ... 17

2.3 Conditions for innovations: changes in the history of innovation 21

3. METHODOLOGY 23

4. METHODS 26

5. LIMITATIONS 29

6. THEORETICAL FRAMEWORK 30

7. RESULTS & ANALYSIS 35

8. CONCLUSION 48

9. BIBLIOGRAPHY 55

10. PRIMARY SOURCES 61

INTRODUCTION

Innovation is everywhere. Innovation is not only in the world of goods and services but also in words: Innovation has been the attention of many scholars that discussed the concept in the scientific and technical literature and the social sciences and humanities.[1] Innovation is also seen as a central idea in the popular imaginary, media, and public policy. Recently, innovation has become the emblem of modern society and a remedy for resolving many problems.[2] Throughout history, everyone is an innovator, so it becomes fair that everyone should be involved in the process of innovation. However, with the many faces of innovation, a prevalent aspect that is constantly encouraged – specifically by governments – has emerged, and that aspect is the face of technological innovation. With the rise of technological innovation as the dominant view, it has been identified as the main contributing factor to economic growth. It is believed that technological innovation is good not only for individuals or groups (as studied by sociologists, for example) but also for the nation: It brings revolutionary changes to the national economy.[3] In his book, Innovation Contested, Godin narrates his observations on the concept of innovation as fast-changing. He saw this new phenomenon that made everyone want to get on the train of innovation. He says, "Over the last 60 years, innovation has become an ideal to believe in and a value in itself. Everyone appropriates the word: Biologists talk of 'animal innovation'; sociologists have replaced the concepts of modernization and social change with innovation and have reintroduced the century-old phrase 'social innovation' into their theories; economists began to use innovation interchangeably with their preferred concept—technological change—and technology became technological innovation in the writings of historians."[4] This understanding has led to the idea that

[1] Alana Corsi et al, "Technology Transfer Oriented to,"
[2] Benoît Godin, "Innovation Contested." Vol. 98. London: Routledge, (2015)
[3] Godin, "Innovation contested," 12
[4] Godin, "innovation contested," 12

technological innovation is the source of national wealth: It is the source of productivity for firms and world leadership for nations.

Technological innovation as we know it today, which is in itself a Western concept, is often presented as the precondition to development and "catching up" to the developed nations: the initiators of the concept.[5] In their journey to realize and create technological innovations, developed economies have invested heavily in research, development, and human capital to develop new production methods and technologies.[6] Developing these new technologies and improving existing ones has resulted in vast knowledge production that is visible in our everyday life.[7] This knowledge that has been created needed to be urgently transferred to the rest of the world, in the hopes of taking them out from the 'darkness' and into the era of technological civilization. Among the reasons behind this urgency in transferring knowledge and technologies is due to the dominant view that technological advancement would bring about a civilizing force that would lift the living conditions of the people and help improve their productivity and economic growth.[8] However, the transfer, although successful at times, is not always as smooth as required since the effects of technological innovations on developing nations' economies are significantly different from those of most industrialized nations. This is due to the various constraints and obstacles that inhibit the development and adoption of innovations.[9] The question here becomes, can developing nations grow their economies without this specific type of 'imported' innovation

[5] Shorouk El Hariry, "On Our Own Terms: Towards a History of Arab Technological Landscapes and Cultures." Technology and Culture 62, no. 1 (2021): 241–52
[6] Shimaa Elkomy, Hilary Ingham, and Robert Read. "The Impact of Foreign Technology and Embodied R&D on Productivity in Internationally Oriented and High-Technology Industries in Egypt, 2006–2009." Journal of Industry, Competition and Trade 21, no. 2 (2020): 171–92.
[7] Ibid.
[8] Castaño-Martínez, Maria-Soledad. "Product Innovation and R&D Policy: The Case of the Transformation Industries in Developed and Developing." International Entrepreneurship and Management Journal 8, no. 4 (2012): 421–36.
[9] Ibid.

that became the dominant way of looking at the concept? This research aims to analyse the notion of innovation in the Egyptian business sector, and how people affiliated with this sector understand and apply the concept of innovation. Does their concept of innovation differ at all from the Western-modern notion?

Therefore, this thesis will ask the research question, what does Innovation mean for workers in Egypt's technology sector?

Through analysing existing studies, as well as conducting in-depth interviews with Egyptians working in the technology sector, and have a position of managing innovation in their companies, the thesis aims to collect empirical evidence that will help in answering the following sub-questions:

- What meanings are imbued in the Western-modern concept of 'innovation'?
- What alternative ways of conceiving of 'innovation' are plausible and available to Egyptian society?
- What ways of thinking about 'innovation' are prevalent among workers in Egypt's technology sector, and what shapes their thinking about this concept?

According to Yoav Di-Capua, it is time to stop focusing on what constitutes innovation and progress and look at history through a different lens. This lens need not be used to only view the West as a standard from which the others deviated. Such a view could allow Arabs in general, and Egyptians in specific, to start looking at their way of innovating, not just a way of catching up to their European and Western counterparts.[10]

[10] Di-Capua, Yoav. "Common Skies Divided Horizons: Aviation, Class and Modernity in Early Twentieth Century Egypt." Journal of Social History 41, no. 4 (2008): 917–42

This thesis will try to shed light on the extent to which of the concept of innovation is inherently tied to Western influences in the Egyptian technology sector. The paper is divided into eight chapters divided into introductory segments and empirical segments. The introductory segment establishes that there is indeed a gap that this thesis is trying to explore through analysing the broader field of literature in secondary sources. This literature review would demonstrate that there are elements missing at the heart of the study of innovation in the Arab Muslim world. It also functions as a contextualizing chapter for the conceptual framework for innovation. It also serves as a socio-historical context to the concept of innovation. Following the literature review, two chapters outline the interview mechanisms, and methodology used in conducting this research, as well as its limitations. In the methods chapter of the thesis, a working definition of innovation will be offered based on secondary sources. The research uses the methodology of Critical Discourse Analysis (CDA) through analysing in-depth interviews with workers in the Egyptian technology sector.

Following the contextual chapters, the second segment of the thesis includes empirical chapters that start with offering a critical conceptual analysis of innovation in Western and non-Western contexts based on secondary literature. Following this, the empirical segment offers an analysis and a demonstration of the findings of the in-depth interviews conducted and draws parallels to the conceptual analysis done facilitated by the methodology of Critical Discourse Analysis. Lastly, the conclusion directly engages with the research question asked, and answers it substantively, based on the research findings, rooted in primary and secondary sources. Additionally, it then explores implications and future possibilities regarding the innovation process in Egypt in terms of suggesting future directions of inquiry that could be fruitful.

LITERATURE REVIEW

There is a void regarding knowledge production in the Arab world that historians have only just started to fill. Through their historical analyses, these historians can gain a deeper understanding of the non-Western world's knowledge production, not limited to Science and Technology Studies (STS). There is, however, a new wave of scholars that are trying to deviate from the Eurocentrism accounts of technological innovations and recognize the agency of the Arab people over their ways of innovating throughout their history. In her article titled, "On Our Own Terms: Towards a History of Arab Technological Landscapes and Cultures," Shorouk El Hariry argues that "academic literature on technology in the Arab world investigates technologies central to the macro-narratives of modernization and globalization."[11] She argues, that the emphasis on imported innovations, such as technological inventions and services, makes it challenging to look seriously at ordinary Arab's daily life and the potential of the innovations they use.[12] This phenomenon has the probability of creating some sort of dissatisfaction within the society since the focus is on ways of innovating that are only available to the few, and breaking free from these Eurocentric, Western viewpoints is essential. These observations are similar to those reported by Lansana Keita where she notes that the role of Eurocentrism in the relationship between the Global North and Global South is loud and clear which have affected the shift in viewing the concept of innovation towards the far-more-glamorous notion of technology.[13] Edward Said's famous book, Orientalism, has greatly influenced the field of Arab and the Middle East studies.[14] Through his work, the field has produced scholarship that is both aware of and sensitive to the power relations

[11] Shorouk El Hariry, "On Our Own Terms: Towards,"
[12] Ibid.
[13] Keita, Lansana. "Eurocentrism and the Contemporary Social Sciences." Africa Development / Afrique et Développement 45, no. 2 (2020): 17–38
[14] Said, Edward, "Orientalism," New York: Pantheon Books, (1978)

created and reinforced by British and French colonialism. Orientalism as a theory, states that the world is made of two unequal halves: the Occident and the Orient. In a way, orientalism is the distribution of the awareness that these two halves exist and is shown in various academic, philosophical, and historical texts. The writer of these texts decides how history is being written because of the power relations that emerge out of orientalism.

There exists a certain bias in the literature about the notion of modernity and making up for lost time in the Arab world. There is a clear persistence in making modernity become a focal element in prosperity; for example, the Oxford History of Historical Writing devoted an entire chapter to "the advent of modernity in the Arab world and the responses it elicited . . . [which] encompassed the idea of reform and the adoption of new institutions and concepts to make up for lost time and catch up with the progress of European societies."[15] However, this bias has encouraged scholars to resist this dominant narrative. Bray insists on exploring other ways of looking at innovation in non-Western contexts, as these non-Western contexts erase any possibility of looking at "old" innovations that existed before.[16] It is essential to look into what happened to the artifacts and innovation knowledge that were left behind when the "new" innovations swept in. He also argues that it is also essential to analyse how local people responded to new technologies and what areas remained untouched by their novelty. Older innovations are too often presumed to be gradually outdated by newer ones, but what if these innovations had the possibility of being adapted and advanced without a Western alternative?

At certain times, religion and specifically Islam has been to blame for the lack of scientific and technological progress in the Arab world. Stolz argues that such approaches have failed to

[15] Choueiri, "Historical Writing in the Arab World," 578.
[16] Bray, John, and Institution of Electrical Engineers, "Innovation and the Communications Revolution from the Victorian Pioneers to Broadband Internet," London: Institution of Electrical Engineers, (2002)

recognize that Islam features prominently as a significant force in different innovations in timekeeping and astronomical knowledge during the Ottoman era in Egypt. Stolz's monograph, "The Lighthouse and the Observatory." examines the knowledge production in the Muslim world, and the operation of political power through scientific practice. [17] Through his narrative, he draws parallels between Western innovations and sciences, and the pre-existing scientific traditions of religious scholars (ulama) in the region. He describes the people's ability to "look to the stars from a landscape in which the borders of science and religion were shifting." His examination into innovations in that era uncovers features of the sociocultural performance of piety and the predicament that influences political power and scientific methods.[18] Other studies identify that the changing perceptions of understanding science and empire could help us expose what the Eurocentric narratives consider innovation, which might lead to a better and more subtle way of looking at the relationship between innovation and society in the Muslim world.[19]

2.1 Innovation in the Socio-Historical Perspective

This section draws out the history of the concept of innovation and how it has evolved through time in a Western and non-Western perspective. Jan Fagerberg mentions that "Innovation is not a new phenomenon."[20] He argues that innovation has existed ever since humanity began and he adds that, "There seems to be something inherently "human" about the tendency to think about new and better ways of doing things and try them out in practice."[21] However, despite its clear importance, scholarly work on the concept of innovation has been scarce and was not given the

[17] Stolz, Lighthouse and Observatory, 20.
[18] Ibid.
[19] Fagerberg, Jan, "Innovation: A Guide to the Literature," Centre for Technology, Innovation and Culture, University of Oslo (2003)
[20] Ibid.
[21] Ibid.

attention it deserves. For many students of long-run economic change, focused on other factors such as capital accumulation and the working of markets.[22]

2.1.1 Innovation in the Western perspective

One of the main lessons that emerged from the literature was that technology is only one component of innovation.[23] This realization has led to a change in the way that scholars think about innovation. During the last decade, a number of new research facilities and departments have been established, focusing on the role of innovation in social and economic change.[24] This has created a turn into how innovation is defined and gradually this definition started becoming the dominant one. As an example, Maclaurin defines innovation as (1) a process, (2) a sequential process in time, (3) a process that starts with science (technology), and (4) a process whose ultimate stage is commercialization.[25] Morton refers to innovation as a process that involves people acting together and cooperatively from invention to scalability.[26] It was also defined as not just about scientists but also about the totality of human acts that result in creating new ideas.[27] Other examples exists in the literature that define innovation and limit it to commercialization and scalability. The impact of this definition on today's world is that innovation is now spontaneously understood as technological innovation because of its contribution to economic "progress". Yet, for 2,500 years, innovation had nothing to do with economics in a positive "sense."[28] On the contrary, innovation

[22] Ibid.
[23] Fagerberg, J. (2000) "Vision and Fact: A Critical Essay on the Growth Literature", in Madrick, J. (ed.), Unconventional Wisdom, Alternative Perspectives on the New Economy, The Century Foundation, New York pp. 299-320
[24] Ibid.
[25] William Rupert Maclaurin , "Innovation and Capital Formation in Some American Industries," in US National Bureau of Economic Research, Capital Formation and Economic Growth, Princeton (N.J.): Princeton University Press (1955): 551–78.
[26] Jack A. Morton, "Organizing for Innovation: A Systems Approach to Technical Management", New York: McGraw Hill. (1971)
[27] Godin, "Innovation contested,"
[28] Ibid.

was pejorative and political. It was a contested idea, as Godin puts it, in philosophy, religion, politics, and social affairs. Innovation became uncontested only in the last century.[29] This occurred gradually, beginning sometime after the French revolution. Innovation shifted from a vice to a virtue. Innovation became an instrument for achieving political and social goals. The dominant portrayal of innovation as technology has contributed to its central position in various discourses and theories. This positive association has allowed innovation to be regarded as a legitimate modernization. A question then arises about how the phrase technological innovation has acquired such a force in the modern world. It has shifted the worldview on the ideology of growth through innovation.

Over the millennia of human history, it has been observed that the global leader in technology and science has passed through different societies.[30] Surveys of historical records revealed that the world's most influential nations, however, few they are, during technological change were diverse.[31] Some include the ancient Egyptians, the Romans, China's Yuan dynasty, Britain in the first industrial revolution, and the Dutch Republic during its "golden age".[32] Sharp differences in their performance accompanied the rapid emergence and subsequent decline of various societies during technological change. This was also due to the constantly changing leadership, which directly impacts differences in Science and Technology (S&T) performance.[33] Individual states rose and fell over time, but diversity in national innovation rates remained intense and persistent. In fact, before the 19th century, the idea of technology and science was not widely recognized. In most cases, it was regarded as a curiosity or a hobby rather than a national goal for a nation or a

[29] Ibid.
[30] Taylor, Mark Zachary, "The Politics of Innovation : Why Some Countries Are Better Than Others at Science and Technology," (2016).
[31] Ibid.
[32] Ibid.
[33] Ibid.

society.[34] Nevertheless, during the past 70 years, the rise of a new social paradigm has been observed regarding innovation.[35] As discussed earlier, the 1960s were a time where technological innovation became a central reason for progress. However, this narrative has also been adopted in government discourse as the rise of various debates about competitiveness and industrial competition started taking place. Scholars and international organizations started encouraging and labelling technological innovations as the solution to economic stagnation. Governments were (and still are) encouraged to pursue technology and inject it into their policies.[36]

Some scholars argued that there were technological gaps between nations due to the time lag between the invention and commercialization of new technology.[37] Today, most people realize that scientific and technological advancements can improve their standard of living. However, this new paradigm has also led to an idealized view of scientific and technological progress that leads to solving issues that it has created, such as air pollution, industrial poisons, automobile deaths, and climate change. As a result, all countries now dedicate at least some resources toward pursuing S&T. This dramatic change may have nullified anything like Cardwell's law. The concept of Cardwell's Law is built on the idea that new technology has to face resistance that concludes with a decline. It claims that every nation once advanced in technological innovation has done so for a limited period. Simply put, nothing fails like success.[38]

In 1742, David Hume stated that when the arts and sciences are at their absolute best, they tend to decline and seldom or never revive in a country that used to be their dominant state.[39] E.H. Carr also stated that "the group--call it a class, a nation, a continent, a civilization, what you will -

[34] Ibid.
[35] Moon, F. C. "Social Networks in the History of Innovation and Invention," (2014)
[36] Taylor, Mark Zachary, "The Politics of Innovation,"
[37] Ibid.
[38] Mokyr, Joel. "Cardwell's Law and the Political Economy of Technological Progress." Research Policy 23, no. 5 (1994): 561–74
[39] Godin, "innovation contested,"

which plays the leading role in advance of civilization in one period is unlikely to play a similar role in the next period."[40] A persuasive explanation of Cardwell's Law relies on the resistance to new technology. Innovative technology has to battle against powerful interests which try to prevent its progress. This is evidenced by the work of Theodore Jones and Timur Kuran, as well as by the pathbreaking work of Michael Olson. The idea that in a closed system, whether it's a huge empire or a small society, the forces of conservatism can exert their power over innovation is a powerful one. It will make it harder for new technology to emerge.[41] This idea has created a dilemma for many economists as they view it as a market issue rather than a political issue.

Coming up with an innovative idea, whether it's a service or product, can undoubtedly enhance society as a whole. However, certain individuals might not benefit from such innovation as it might harm their interests. The automobile concept faced major resistance from horse carriage businesses as they saw the innovation as competition to their existence.[42] Hence, their response involved politics as they started lobbying against automobile businesses by calling for higher taxation on them, and they succeeded in doing just that. Historians and sociologists have shown that technological change can empower or disadvantage a social group over others. For instance, by changing the demand for labour, new technology can alter consumption patterns and access to information.[43] It can also fundamentally alter the people who perform these activities. New technology can also create social tensions and resentments, as it can affect the political and economic power of everyone. This is because it can redistribute wealth and prestige the same way

[40] Carr, E.H., "What is History?," Vintage Books, New York, (1961): 154
[41] Kuran, T., "The tenacious past: theories of personal and collective conservatism," Journal of Economic Behavior and Organization 10, (1988) 143-171.
[42] Taylor, Mark Zachary, "The Politics of Innovation"
[43] Ibid.

innovation does. Even if everyone supports the progress of S&T, some people might still oppose the policies and institutions that promote innovation.[44]

2.1.2 Innovation in the Arab Muslim perspective

Innovation is also not a new phenomenon in the Arab Muslim world, it was however, still contested throughout the medieval Muslim era. It has gone from being an absolute sin that should never be practiced, to the idea that without it the obstruction of the Muslim mind is unescapable. The sinful part of innovation in the Muslim world could be connected to a certain interpretation of a saying (Hadīth) of the prophet Muhammad that says, "The worst of all things are novelties (muḥdathāt). Every novelty/innovation is a heresy (bidā'a), and every novelty/innovation is an error (ḍalāla), and every error leads to hell." The interpretation that innovation is a sin has led to the creation of the concept of Taqlid. Taqlid is an Islamic term that refers to the conformity of one person to another. The person who performs this act is referred to as muqallid, which simply means to imitate. In his paper, Taha J. al-ʿAlwānī, a medieval Muslim scholar, stated that Taqlid is a curse that is hindering the Muslim mind and is threatening the development of the Islamic community (Ummah). He believes that the doctrine of abandoning innovation and creativity is a dangerous one that can allow other societies to grow while the Muslim world remains stagnant for the principle of following others.[45] He argues that Taqlid also has the potential to affect the Islamic thought of the people and drive them to adopting backward thinking. al-ʿAlwānī was an advocate of Ijtihad, a term that refers to the act of coming up with independent reasoning and working on creating new knowledge. He acknowledged the importance of preserving the knowledge production of the religion without following extremist ideologies (Ta'assub). Instead, Ijtihad

[44] Alana Corsi et al, "Technology Transfer Oriented to,"
[45] T.J. al-ʿAlwānī, "Taqlīd and the Stagnation of the Muslim Mind," American Journal of Islamic Social Sciences 8 (1991): 513-524

should be done through the establishment of a strong opinion and avoiding making judgements based on weak ones. He says, “Allah Most High chose the Muslims to be the ummah of mission (risālah), of exemplary good (khayrīyah), of the golden mean (Wasatīyah), and of witnessing to humanity (Shahāda). Along with these responsibilities came the capacity for renewal, for ijtihad, and for correctly interpreting the Shari'ah.”

Ibn al-Jawzī (d. 597/1200) is Muslim Imam who was a linguist and a preacher who viewed innovation in an obscure manner.[46] In one of his religious writings, he warned scholars and writers about the dangerous ways of the devil in manipulating the mind and directing it to worldly benefits that does not seek sincerity for Allah.[47] His aim is to create some form of uniform legal Islamic rules that must not be seen as representing a qualitative decline or a lack of originality. From the sixth until the twelfth century, the promotion of Taqlid was the selected narrative. The increasing prominence of it had at one point led most Western scholars to believe that the "gate of ijtihad" was in fact effectively closed around tenth century.[48] Ibn al-Jawzī’s glorification of Taqlid in religious sciences and the abandonment of innovation has led to the limitation of knowledge production in the fear of falling into the devil’s ways. In his fear of falling into sin, he somehow was calling for the end of knowledge expansion and innovation, synonymizing it with Bidā’a. This ideology has developed to deem any scientific or technological discoveries as sinful, especially if they are concepted by non-Muslims. The idea that Muslims contested innovation is a bit conflated, as during the Islamic Golden age, they were pioneers of innovation, this is obviously embedded in the current religio-political nuances. However, during certain periods of the ottoman Empire, the resistance to non-Muslim innovations was prominent, an example to that was how long it took

[46] Ibn al-Jawzī, Talbīs Iblīs, translation page 50
[47] Ibid.
[48] Intisar A. Rabb, "Ijtihād," The Oxford Encyclopedia of the Islamic World, Oxford University Press. (2009)

Ottoman rulers to build a printing press in Istanbul. It was started almost three hundred years after the first European one, citing that printing in the Arabic language is a sin as it is the language of the Holy Quran.[49] This example, is believed to have been a "self-inflicted" wound on the Muslim world since it had caused major loss of time in benefiting from historical knowledge.[50] According to al-ʿAlwānī, students of today will always be victims of the past scholars.[51] If they still follow the ways of the past, ignorance and extremism will prevail because one cannot simply treat scholars of the past as infallible and their knowledge as uncontested. In contrast, knowledge expansion, innovating and encouraging Ijtihad are essential tools in making religion more approachable, relevant and beneficial.

2.2 Economic Theories of Innovation: Western Development and non-Western Catching up

Innovation is viewed by some scholars as the most important driving force for industrial catch-up, endogenous economic growth, sustainable competitive advantages, and global sustainable growth.[52] The 'endogenous growth theory' concept describes the importance of transferring advanced technology and innovation to developing nations.[53] It is considered a vital factor in long-run economic growth for developing countries. Moreover, according to the "catch-up" theory of growth, the pace of innovation diffusion depends on the technological gap between the advanced and lower-income economies.[54] However, many developing nations have acquired new

[49] Coşgel, Metin M, Thomas J Miceli, and Jared Rubin. "The Political Economy of Mass Printing: Legitimacy and Technological Change in the Ottoman Empire." Journal of Comparative Economics 40, no. 3 (2012): 357–71.
[50] Coşgel, Metin & Miceli, Thomas & Rubin, Jared. "Guns and Books: Legitimacy, Revolt and Technological Change in the Ottoman Empire," Economics Working Papers. (2009).
[51] T.J. al-ʿAlwānī, "Taqlīd and the Stagnation of,"
[52] Romer, P. M. "Endogenous technological change," Journal of Political Economy, (1990): 98, S71.
[53] Shimaa Elkomy, Hilary Ingham, and Robert Read. "The Impact of Foreign,"
[54] Alexander Gerschenkron, "Economic Backwardness in Historical Perspective: A Book of Essays." Cambridge, MA ; London: Belknap Press of Harvard University Press, (1962)

technologies through trade and Foreign Direct Investment (FDI), yet the expected improvements in domestic productivity were not quite met.[55]

Various factors influence productivity, such as education systems, political powers, legal systems, and infrastructure, which are considered barriers to the spread of ideas and innovation across various regions and settings.[56] It was also revealed that innovation in developing countries could be influenced by other factors such as environmental factors, institutional factors, and personal characteristics.[57]

According to the dependency theory, developing nations often depend on developed countries to transfer certain knowledge. Agmon argues that this occurs since the developed world prides itself on being superior in innovation and technology production, which are components that are scarce in the developing world.[58] However, the developed world sometimes falls into the trap of localization and context in which the innovation will be used. Thus, the process of innovation transfer faces obstacles because certain innovations need to be adapted from their origin to suit the reality and needs of the receiver. Hence, certain innovation knowledge transfers fail due to their irrelevance or complexity of localization which either elongates the process or ends it completely. In short, the capability and capacity of the innovation receiver to effectively use it to improve processes and solve problems in response to the changing economic environment becomes an obstacle.[59] Therefore, developing nations cannot compete with the high-end industries of advanced nations due to their lack of well-developed knowledge economies.[60] To try and tackle this

[55] Ibid.
[56] Maimunah Ismail, Siti Raba'ah Hamzah, & Ralf Bebenroth, "Differentiating knowledge,"
[57] Ibid.
[58] Agmon, Tamir, Mary Ann Young von Glinow, "The Environment of Technology Transfer," In Technology Transfer in International Business, University of Southern California. International Business Education Research Program., (1991)
[59] Zanello, Giacomo, Xiaolan Fu, Pierre Mohnen, and Marc Ventresca. "The Creation And Diffusion Of Innovation In Developing Countries: A Systematic Literature Review." Journal of Economic Surveys 30, no. 5 (2016): 884–912
[60] Shimaa Elkomy, Hilary Ingham, and Robert Read. "The Impact of Foreign,"

challenge, all the stakeholders need to work on ensuring that all parties are well-equipped and have all the necessary knowledge to meet the needs of the recipient of the knowledge and innovation.[61]

Another significant aspect of the technology transfer is the technology's complexity. According to Ahmed Ayad et al., the complexity of technology is a major barrier to entry into the high-tech industry, making the transfer even more challenging.[62] Developing countries, like Egypt, usually design programs to acquire complex technology to build local technological capacity and produce local technological value.[63] This way, countries like Egypt fall into the trap of imitation and dependency on foreign innovations from abroad to diffuse it locally.

There are many opportunities presented by Alana Corsi et al. that could work as a guiding principle for the proposed thesis. The main opportunity that the authors mentioned in developing absorptive capacity by providing a smooth flow of information, training, and qualification will allow the use of technology more effectively.[64] Another important opportunity mentioned is the proper laws and regulations that promote the transfer and development of sustainable innovations. According to Ravindranath and Balachandra, the appropriate policies can help move on from the growth of conventional technologies through financial incentives, marketing, or better educational measures.[65] The solutions offered by these scholars neglect the idea that "conventional technologies" need not stay conventional without the notion of Western and "advanced" technologies to be the dominant view of innovating. It is as if the only way to innovate is to let go

[61] Rania Al-Mashat, and Randa Hamza, "Stakeholder Engagement Through Economic Diplomacy: Egypt's Economic Diplomacy Fostering Multilateralism & International Cooperation," The London School of Economics and pollical science, (2020)
[62] Ayad, Ahmed, Ron Matthews, and Ivan Vitanov. "Evaluation of Knowledge Flow from Developed to Developing Countries in Small Satellite Collaborative Projects: The Case of Algeria." Space Policy 51 (2020): 101360.
[63] Ibid.
[64] Corsi, Alana, Fabiane Florencio de Souza, Regina Negri Pagani, and João Luiz Kovaleski. "Technology Transfer Oriented to Sustainable Development: Proposal of a Theoretical Model Based on Barriers and Opportunities." Scientometrics 126, no. 6 (2021): 5081–5112.
[65] Ravindranath, N. H., & Balachandra, P.. "Sustainable bioenergy for India: Technical, economic and policy analysis" Energy, 34(8), (2009):1003–1013

of conventional innovations and move on to Western path of high-tech innovations. Lastly, financing and subsidizing technological innovations solely has the ability to create dissatisfaction among the majority of people who do not view modernity and technology as the only way to innovate. Money is important and every entrepreneur is looking for financing, so if the financing is only provided to technological ideas, then other meanings of innovation are bound to vanish.

In a passage from "How the West Grew Rich," Rosenberg and Birdzell write: "In the West, the individual centres of competing for political power had a great deal to gain from introducing technological changes that promised commercial or industrial advantage . . . and much to lose from allowing others to introduce them first. Once it was clear that one or another of these competing centres would always let the genie out of the bottle, the possibility of aligning political power with the economic status quo and against technological change more or less disappeared from the Western mind."[66] The European states' competitive model concept has been regarded as a "Western miracle". It is often argued that governments can't impose confiscatory taxes, and they are prevented from doing so because of the competition of rival states, which might threaten to lure away the most productive citizens or invade the country in question where its tax-weary citizens would welcome it.[67] Jones introduces a complimenting argument revolving around diversity and genetic variety that helped generalize best practices.[68] The importance of genetic diversity in the rise of modern technology is discussed in the context of the competitive model of economics. It argues that the more diverse a gene pool is, the more creativity it can produce. More precisely, innovation progress can occur either through recombination (drawing together existing pieces of information into novel blends) or by 'mutation' (the emergence of new information or

[66] Rosenberg, N. and L.E. Birdzell, , "How the West Grew Rich," The Economic Transformation of the Industrial World (Basic Books, New York). (1986)
[67] Mokyr, Joel. "Cardwell's Law and the Political," 561
[68] Jones, E.L., "Growth Recurring: Economic Change in World History," The Clarendon Press, Oxford. (1988)

variations of existing information). For either of these forms of progress, a greater diversity of existing forms of knowledge would suggest, ceteris paribus, a higher rate of innovation creativity. Richard Rosenberg argued that the West's rise was due to the diversity of Europe, which allowed scientists and engineers to pursue some of the most significant discoveries before 1800.[69] This demonstrates the difference between the behaviour of a single economy and that of a set of global economies. These existing accounts fail to resolve the contradiction between the drivers of innovation in Europe and the drivers of innovation in other places. For example, the diversity that is seen as a driver for innovation proves that the more diverse the pool of people, the higher rate of innovation and creativity. Hence, this emphasis on technological innovation is flawed as it removes a big pool of innovators.

2.3 Conditions for innovations: changes in the history of innovation

Joel Mokyr explains that three levels should be explored regarding innovation drivers. The first point is that despite the correlation between political and technological pluralism, it is clear that neither is a sufficient condition for innovation.[70] Secondly, Despite the various political and ideological changes over the years, innovation and creativity have not yet been affected by these changes.[71] Mokyr argues that political fragmentation has not significantly affected innovation from classical Greece to the early twentieth century. Thirdly, Mokyr mentions that both Rosenberg and Jones fail to acknowledge the enormous costs and risks of political fragmentation. The internecine wars that began in Europe have been widely underestimated from their inception. In some cases, political fragmentation and interstate competition did far more damage than was tolerably affordable in exchange for any putative technological benefits they may have conferred. However,

[69] Mokyr, Joel. "Cardwell's Law and the Political," 562
[70] Ibid
[71] Ibid

much of the research up to now has been descriptive in nature regarding innovation drivers as there is a gap in the literature about the innovation drivers in the Arab world that is outside technological innovation. During the modern era, the early historians of Africa were West Europeans hailing especially from Britain, France and Germany.[72] In her article, "Eurocentrism and the Contemporary Social Sciences," Lansana Keita mentions that "the works of the Ancient Egyptian historian Manetho and other African historians such as Ibn Khaldun, Sadi, Kati, and others were more or less ignored. Similarly, scholars such as Plotinus, Zara Yakob, Ahmed Baba, and others are usually not included in the literature on the history of ideas." One question that needs to be asked, however, is whether there exists a fertile environment for innovation in the Arab world when not only the history was written in the West, but the present and future of innovation is the dominant discourse.

Another element that is often discussed in the literature on innovation is culture. It is agreed that the wider concept of innovation is essential in economic development, as it can help create new ideas that can solve people's problems and enhance their lives one way or another. However, it is also essential to consider cultural factors that both promote and prevent the innovation process. Aside from the physical and intellectual capital aspects, cultural and intellectual capital are also important in assessing a country's development and innovation rates. One strategy to integrate these two factors is to include the values and behaviours of the individuals in a country in the study.[73] Edward Nissan argues that culture, proxied by associations and human capital, "would have a positive indirect effect on economic growth and progress through innovations and

[72] Keita, Lansana. "Eurocentrism and the Contemporary Social Sciences." Africa Development / Afrique et Développement 45, no. 2 (2020): 17–38

[73] Nissan, Edward, Miguel-Angel Galindo, and María Teresa Méndez Picazo. "Innovation, Progress, Entrepreneurship and Cultural Aspects." International Entrepreneurship and Management Journal 8, no. 4 (2012): 411–20

entrepreneurship."[74] However, he argues that it would also be necessary to consider the effects of the "culture of consumption" developed in the developed societies to maintain the production activity. In this view, innovations play an essential role, as does the entrepreneur as the economic agent who creates them or efficiently introduces them in the production process. It is also necessary to consider culture in this process because it creates a model of behaviour that either promotes or discourages the innovation process. Thus, it is clear that there has been a shift in the culture of the Arab world as consumers of Western innovations which directly influence their way of thinking about innovation. The gradual yet steady strides towards modernity trap the people of the Arab world in Eurocentric paradigms that view innovation in a certain way. Qassim Amin, an Egyptian jurist, Islamic Modernist and one of the founders of the Egyptian national movement at Cairo University, once said, "We grant scientific and technical progress to Westerners, because their effects surround us wherever we look. . . . In sum, we find material proof everywhere, every day, that compels us to concede that we lag behind Western civilization in scientific and technical knowledge. But it is as though we wish to erase the shame that results from this confession, and to take our revenge. And we find no other means to do this but to claim that we have superior moral standards, and that if they excel in material developments, then we excel in spirituality and soul."

METHODOLOGY

It is essential to critically study the discourse of the community that enables them to think about innovation to analyse how Egyptians working in the technology business sector portray innovation and classify its ideological approach. This paper aims to methodologically investigate this concept within a discourse via Critical Discourse Analysis (CDA) to elucidate the effect of a

[74] Ibid.

certain hegemonic definition of the concept of innovation on Egyptians. The analysis is critical because it underpins the power relations that underly the power asymmetries involved through the concept of innovation within a discourse. Discourse analysis is viewed as a subfield to "social constructionism," a field of study that focuses on the study of social processes. In this sense, discourse analysis refers to how people talk about and understand the world. It can form a knowledge structure that is purported to be the truth. The general idea of this discipline is that ideas and knowledge are not always accurate representations of reality. Thus, the Western hegemonic discourse over innovation should not be taken as the sole definition but rather as a socially constructed definition that works in specific cases and at specific times. The definition that involves technology, scalability, and commercialization should be viewed and treated as a certain category of knowledge and not the only solution. The way people understand the world is influenced by their perceptions of how it works, and thus, this perception is a tool that shapes their decision-making process. This paper explores the extent to which more nuanced ways of thinking about innovation are plausible and available to Egyptian society.

Critical discourse analysis contends that discursive practices contribute to the creation of unequal power relations between different social groups and the effects can be considered as ideological effects.[75] For instance, practices that involve discrimination or stereotyping can affect the power relations between women and men, ethnic minority groups, and social classes.[76] With the rise of Eurocentrism and the Western hegemony in the past 150 years, the dichotomic ideas of core and periphery, modernity and tradition have become nurtured and applied. It has created discursive narratives that put the Western ideology on a pedestal, which has created unequal power

[75] Marianne Jørgensen, Louise J. Phillips, "Critical Discourse Analysis," in Discourse Analysis as Theory and Method, SAGE Publications Ltd, (2011): 4
[76] Ibid.

relations discussed above. Hence, innovation as a concept applies to this unequal power relations described by the Foucauldian view of "power as a force which creates subjects and agents - that is, as a productive force - rather than as a property possessed by individuals, which they exert over others."[77] The power and influence over the narrative on innovation have forced non-Western nations to follow and use Western innovations and aspire to replicate them rather than create their own. The research goal of critical discourse analysis is to analyse the various discursive practices that create representations of the world and social relations, including power relations.[78] It also aims to identify the ways in which these practices influence the interests of certain social groups over others. In his paper, "Critical Discourse Analysis and the Marketization of Public Discourse: The Universities," Fairclough defined critical discourse analysis as an approach that looks to systematically investigate

> [o]ften opaque relationships of causality and determination between (a) discursive practices, events and texts and (b) broader social and cultural structures, relations and processes [...] how such practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power [...] how the opacity of these relationships between discourse and society is itself a factor securing power and hegemony.[79]

[77] Ibid.
[78] Ibid.
[79] Fairclough, Norman. "Critical Discourse Analysis and the Marketization of Public Discourse: The Universities." Discourse & Society 4, no. 2 (1993): 135

Critical discourse analysis is regarded as critical because it seeks to understand the role of discursive practice in maintaining the social relations around the world and within a certain society, including those power relations discussed above. It aims to contribute to the advancement of social change by analysing the ways in which different social groups are affected by the practices that create inequalities.

METHODS

This research uses a qualitative design approach and it aims to generate insights on the state of innovation in the high-tech business sector in Egypt. Furthermore, there are various meanings and definitions to the word innovation. However, Innovation is considered to be a concept, and when asked about what makes a word sometimes a label and at other times a concept, Benoît Godin said that "a word has a conceptual space that makes it a concept."[80] Koselleck also suggested that "The enlargement of a concept's semantics field, marks its passage from the rank of a mere word to that of a [concept]."[81] However, Godin argues that innovation is a contested concept as some viewed it as "introducing change into the established order", but he sees it as a broad concept that involves different elements.[82] A concept incorporates multiple meanings, suggests Koselleck. Such is the case with innovation.[83] For the sake of this research, the paper will use the definitions of Rogers, Koselleck, and Godin for innovation which is "Innovation is an inherently social process, requiring interaction with others, that involves creative activity for knowledge creation and diffusion of existing knowledge."[84] The choice of this definition roots from the need to steer

[80] Benoît Godin, Innovation contested, 234
[81] Koselleck, 'Introduction and Prefaces', 20.
[82] Benoît Godin, Innovation contested, 236
[83] Koselleck, 'Introduction and Prefaces', 20.

[84] Rice, Ronald E., and Everett M. Rogers "Reinvention in the Innovation Process," Science Communication, 1: (1980) p. 499–514.; Benoît Godin, Innovation contested, 236; Koselleck, 'Introduction and Prefaces', 20.

away from the essentially unreflexively meaning of the concept which revolves around the ideology of modernity and the 'positive' contribution of industrial/technological innovation to economic growth. The choice of using a qualitative discourse analysis approach through in depth, semi-structured interviews with Egyptians working in innovation, would shed light on how these people view innovation. Five interviews were held with the participating employees that work in different sectors in the high-tech start-up market in Egypt. Their portfolios were diverse, however, they all have innovation as part of their responsibilities. The interviews were used to uncover how each of them perform their job, as well as, their thoughts and ideas on innovation in their fields.

The interviews were held in English. Even though the interviewer and interviewees are native Arabic speakers, it was agreed that the interview be held in English as their working language is English so the usage of certain acronyms in English was expected. The interviews were held and recorded using the virtual platform Zoom since the interviewer is residing in the Netherlands and the interviewees were in Cairo. The interviewer has had a previous working relationship with all the interviewees as they have worked together in the same organization before. These interviews were analysed using a mixture of inductive and deductive coding frames that allowed taking the data and systematically categorizing excerpts in order to find themes and patterns for analysis. The unit of analysis is based on the given definition of what innovation is. From it, themes (intensions) were selected to facilitate the analysis. These intensions are: Social process, creative activity, knowledge creation, and knowledge diffusion. Moreover, the unit of observation is the extent of the Western influence and power relations that are used with innovation in Egypt. The interviewees were selected on the criterion of: industry and function.

This research data was collected through five interviews. Each interview was recorded, then transcribed using a transcribing platform and later reviewed to minimize any conceivable error.

After the transcribing, all the dialogue was analysed using a coding frame. Next, all the transcripts were grouped together to form one single coding frame. This coding frame consisted of Three main elements that are related to the units of analysis and observation. The elements have been marked in the transcripts with a colour in the following manner:

- Creative Activity (Yellow)
- Motivation for Innovating (Red)
- Western Influence (Grey)

The next step was to collect the codes that have been reported in a scheme, which was used to recognize patterns. Finally, the patterns and codes were linked together with the existing literature. The insights and results have been helpful in trying to answer the research question and its sub-questions. The research guidelines were under Boeije's axial coding, structuring and interpretation.

Certain quality indicators have been followed during the research using Bryman's method of quality indicators for qualitative research. The criteria as stated by Bryman are, reliability, replication and validity. The reliability of the research was demonstrated through recording and transcribing each interview, and the same topics were used and explained to each interviewee, so that each one of them would follow the same themes. Moreover, the replication element was ensured through having the same introduction to each participant so that they would have the same information about the research and its objective. Finally, the third element of validity was guaranteed by having the interviews virtually to ensure a more comfortable setting for the interviewees. the construct validity of the research was measured by collecting various literature sources that would help measure the requirements.

LIMITATIONS

There are two core limitations when conducting qualitative research on understanding the concept of innovation in Egypt. The first issue is that in-depth interviews could be limited in interpretation as personal experience and knowledge can influence observations and conclusions. This process often leads to discussions and personal interactions that deviate from the main idea. Since it involves collecting data, these discussions tend to deviate from the objective of the research output. The second limitation has to revolve around the representation of the statistics as it is a perspective-based method, and the responses are not measured. Moreover, since the number of interviews is limited to five in total, and although they are from different segments, this puts the research in a limited scope that might not represent Egyptian society. Yet, I believe it still gives a preliminary idea of how the background and experience of these individuals have shaped their views on innovation and their jobs. The number of women in leadership in Tech around the world is known to be of limited size, yet it is growing. According to a study conducted by Deloitte, the share of women in the global tech workforce has risen from 6.9% in 2019 to 11.7% in 2022.[85] The fastest growing sector was the number of women in leadership roles.[86] Women in leadership in the Egyptian tech scene are also scarce, that is why, unfortunately, all the interviewees were men. The ages of the men could not be viewed as diverse since they are aged from 28-39.

Another, may be less limiting, element of the research is how different concepts are commonly used in different fields and intellectual traditions. For instance, concepts are employed differently in Marxist, Weberian, rational choice, and behavioural choice. However, there is still a lot of

[85] Susanne Hupfer, Sayantani Mazumder, Gilian Crossan "Women in tech are cracking the industry's glass ceiling, achieving double-digit gains in leadership roles" Deloitte Insights (2022)
[86] Ibid.

ambiguity surrounding these terms. As David Collier and John Gerring state, "concepts are routinely stretched to cover instances that lie quite a bit outside their normal range of use. Or they are scratched to cover only a few instances, ignoring others."[87] The fear here would be how to sway the interviewees from their own biased opinion on what innovation means, which might be influenced by their connection to the Western definition of the concept involving technology and commercialization. Hopefully, the result of this methodology is the delivery of answers that showcase the richness of the concept of innovation and are not overly dependent on the hegemonic Western definition.

THEORETICAL FRAMEWORK

"As we are ... prisoners of the words we pick, we had better pick them well."

- Giovani Sartori

This research project explores the definition of innovation in Arab Egyptian society through conceptual analysis. This will be followed by an investigation of the Egyptian innovation sector seeking to understand the main objective of seeking innovation through in-depth interviews. Firstly, to delve into what innovation means for Egyptians, there needs to be a working definition for the concept that suits a certain context. The complexity of the internal richness of a concept or idea raises the question of its definition. On the one hand, if we cannot define what a concept or idea is about, then concepts cannot be defined. In other words, it becomes challenging to define something that contains many elements and meanings. Nietzsche explains this challenge when he says, 'only that has no history can be defined.[88] Thus, as Koselleck also notes, concepts cannot be

[87] David Collier and John Gerring, Concepts and Method in Social Science: The tradition of Giovanni Sartori
[88] Koselleck, 'Introduction and Prefaces', 20.

given definite meaning; they can only be interpreted.[89] To understand the relationship between why and how certain elements and relations are chosen, we need to pay attention to the context of the concept, that is, the frame, environment, or field in which the concept is embedded.[90] Hence, it is essential not to ignore the relationship between a concept and context. In this sense, this paper will investigate the Arab context regarding innovation to understand how it is defined and lived daily. There is a sense that there is a challenge of social transformation defined by structures of Western dominance that have shaped our daily life, changing our language along the way.[91] The concept of innovation has been defined specifically, limited to technological innovation and the commercialization of an invention.[92] Since this association to the concept is rather 'Western', it becomes clear that developing nations started developing the need to 'catch up' to the technological advancement of the West that was seeded by technological innovation. Theories of innovation are incomplete when they stress basic research as the source of innovation. Thus, an alternate definition of what innovation is considered in the context is essential in understanding how Egyptians might be going through some creative process, but it's not observed appropriately. Innovation could be seen as a total process that starts with conception and ends with the application.[93] For the sake of clarification, this paper intends to use a definition for the concept of innovation that is derived from how Rogers, Koselleck, and Godin defined the concept. The definition chosen for this research is useful as it strays away from the idea of commercialization of innovation and holds a broader meaning beyond technology and modernity. The definition is:

[89] Ibid
[90] Approaches to Concept Analysis -Felix Berenskoetter
[91] Arlene B. Tickner and David L. Blaney, eds., Thinking International Relations Differently (London: Routledge, 2012)
[92] Approaches to Concept Analysis -Felix Berenskoetter
[93] Koselleck, Futures Past, 34.

> "Innovation is an inherently social process, requiring interaction with others, that involves creative activity for knowledge creation and diffusion of existing knowledge."

In today's world, when conducting social science or humanities research, the concept of innovation becomes employed to limit the scope of whole knowledge. It is used in a manner that scratches to cover only a few 'intensions,' ignoring others. These intentions became limited to technological innovation and the commercialization of inventions. John Gerring explains that concepts are routinely stretched to cover instances that lie outside their normal range of use.[94] Or they are centering around a few instances, ignoring others. However, in the case of the concept of innovation, the usage is quite specific to the extent that it obtained a hegemonic linguistic use that benefits a group over the other and forces a group to catch up to the other with their definition of it. In that sense, the definition used in this research could be helpful as it involves three main intensions that could guide the research in the right direction: creative activity, social process, and knowledge creation and diffusion.

Creative activity: The creative aspect of innovation is displayed with the involvement of creative talents who work individually or in a group on creative ideas through experimentation for change. Creativity refers to the outcome or result of something different and original of a creative act that remains mysterious. [95]

[94] Collier and Gerring, Concepts and Methods, 97–150.
[95] Benoît Godin, Innovation contested, 234

Social process: Innovation is a gradual rather than a sudden process, as each phase of the process needs to be connected progressively and incrementally within the society, showcasing the range and depth of how innovation is connected to established societal values and culture.[96]

Knowledge creation and diffusion: The objective of the innovation process should be to generate new knowledge that would benefit the society, as well as enhancing existing knowledge and growing it. From then on, innovation becomes a concept that serves the societal narratives to positively make sense of the present, past, and future.

In his article, Felix Berenskoetter underlines that the question of what a concept is impossible to answer in a single way.[97] He argues that "Concepts never just 'are', they are human creations, and the form they take is internally complex and varies significantly.[98] And any effort to grasp this form is already an effort in conceptualization. According to Max Weber, concepts are an abstract frame that helps us generate knowledge about the world.[99] They are our way of overcoming 'the extensively and intensively infinite multiplicity' of empirical reality. During the 1960s and 1970s, when concepts were being introduced to political systems all around the world, Sartori provided his famous discussion about the interplay between the "intension" of a concept, i.e., the meaning it calls forth or the number of defining traits, and its "extension," i.e., the fields of referents or range of cases to which it can appropriately be applied. According to William Connolly, naming something provides a character. It also helps us communicate and research the world.[100] What we know and what we don't know through concepts. Through concepts, Berenskoetter argues that,

[96] Ibid
[97] Berenskoetter, Approaches to Concept Analysis, 154
[98] Ibid
[99] Thomas Burger, Max Weber's Theory of Concept Formation, 77
[100] Gerring, Concepts and Method in Social

although some concepts can be easily seen as objects in a concrete material world, such as “table” or “chair”, those that are prominent in social sciences, such as "democracy" or "war," are not necessarily visible in this context.[101] Instead, they are often referred to as “broad and complex phenomena whose material manifestations are plural, shifting, and incomplete – if they are accepted to exist first.”[102]

This paper uses a group of in-depth interviews of members of Egyptian companies that work on innovation as the main role in their organizations. These individuals will be able to provide an understanding of how the intentions they use in defining innovation impact the extension of their work. Qualitative research is carried out across various academic literature to consider the difference in understanding and defining the concept of innovation through Sartori’s approach to conceptual analysis.

Given the scenario described above, this research aims to offer a critical assessment of the use and understanding of the concept of innovation in the business technology sector in Egypt. To reiterate, the research question is: What does innovation mean to Egyptians working in the business sector? The discourse seems to be dominated by Western influences and has many nuances. In various scholarly works, the concept of innovation started gaining this narrow definition that encompasses scalability and commercialization and commonly stipulates that innovation is essential for economic growth in a neoliberal economy. For this reason, in-depth interviews were conducted for analysis by drawing connections in prior established research. This paper argues that Egyptians working in the technology business sector in Egypt are focusing on coming up with innovations that are solely influenced by the Western hegemonic definition of innovation. This

[101] Berenskoetter, Approaches to Concept Analysis
[102] Ibid.

comes from trying to catch up to Western economic growth, assuming that their technological innovations fuelled by neoliberal approaches are the only way of conceptualizing innovation. Thus, this causes a sense of dissatisfaction among Egyptians since they use a particular concept of innovation or a specific understanding of it. Instead, other ways of interpreting innovation and conceptualizing innovation should be accessible culturally to Egyptians, at least in the same way the Western concept is available to them. This research and inquiry aim to expose power relations that underline social realities.

More specifically, Egypt's normative understanding of innovation does not account for other means of conducting or thinking about innovation. It narrowly defines the creative process involved in innovating vis-à-vis broader methods that justly recognize the agency of the Egyptian people over their material and innovation history. As for the Western innovation discourse element, this paper demonstrates that power relations influence a concept within a discourse. The relationship between economically powerful states and "developing nations" is prejudiced by a state of dependency and discourse hegemony where one side is working on influencing the development of the other side.

RESULTS & ANALYSIS

In this chapter, the qualitative discourse analysis will be discussed and further clarified. As explained earlier, five interviews were conducted for this research. One participant is holding the position of VP Growth & Data in a FinTech company, another one holding the position of Product Manager in the freight industry, one is a cofounder of an Education Tech start-up, another person is a product manager in the Health Tech industry, and lastly, a cofounder of a food and beverage start-up. The age of the participants varies between 28 and 39, and the active working years varies

between 6 and 11 years. Unfortunately, and due to the fact that leadership roles in the high-tech industry in Egypt is male dominated with over 90% of the leadership are men, the participants were all men.[103] Furthermore, bits and pieces of the coding frame will be used in this chapter to stipulate the results. In the following segments, this paper will list out the observations and analysis of the interviews.

Western Influence in innovating

One of the most critical observations that frequently arose in all the interviews is the extent and degree of the Western influence on the participants' way of working and thinking. Although three out of the five participants studied in public universities, their language seems to include a lot of Western concepts. The Western influence does not only stop with language but also in the manner of describing their work. One participant found it easier to explain what his company does by comparing it to UberFreight, a product that Uber provides for logistics services.[104] Multiple participants mentioned the necessity of keeping up to date with similar companies to theirs abroad in order to anticipate expected problems that are faced in the industry. When asked about why this comparison is important, one participant said, "*because, if you think about it, the company portfolio looks very similar,*" and even went on to describe his own company as, "*the Mediterranean brother of Klarna (a Swedish FinTech company)*." This Western influence that is accompanied by comparisons to Western companies seems to have a direct impact on the way people innovate in their jobs. This influence seems to have created trust in the way these Western companies work and have impacted the way the participants do their work. When asked about

[103] There is no specific statistics about the women in leadership in the industry in Egypt, however, the participants have all confirmed that women cannot be more than 10% in leadership roles.
[104] Uber has multiple products that they run in specific countries. UberFrieght does not operate in Egypt at the time of the interview.

where the participants get their motivation from, one participant stated that one would have to look at the "bigger" or more "popular" names as "*those [are the] ones who have a proven track record of success in their products, [and] those are the products that people use, and those are products that proved to be a success as well."* He continued on by saying, "*it's easier to find inspiration from them because you know that they have already gone through that same process and it's a validated tool or application to look at."*

As a consequence of representing innovation and assigning it as the key philosophy of modernity, an environment has been nurtured in a way that is devoid of any sort of questioning of what innovation really is beyond modernity and technology.[105] Explained by one of the participants, when an entrepreneur is searching for funding for their idea the investors most usually ask about whether there is a version of their idea abroad or not. Innovation then becomes about replicating an already existing idea that functions abroad into the form of a successful company. One participant explained this by saying, "*And even if, let's say, I didn't automatically go through a process to replicate those [ideas], as a customer, I have been using products as I'm a customer myself of those products and those examples, and having used those things, I subconsciously or unconsciously, even, am going to find myself taking those ideas even if I'm not intentionally taking them, but I'm just used to experiencing them."* The dominant diffusion of Western technologies all over the world have wired the way people think about certain ideas through constantly experiencing them. This results in a unified way of innovating as innovation gained a dominant and restricted meaning (technological), as contrasted to its diversity of meanings in the past.[106]

Another observation that was discovered throughout the interviews is the fact that looking for inspiration and trying to stay up to date about other companies is not always from international

[105] Godin, "innovation contested"
[106] Godin, "innovation contested"

sources. Multiple interviewees have mentioned that they do indeed look for other Egyptian companies, whether they are competitors or not, for inspiration. However, one participant noted that although they do look at other Egyptian companies, it does not negate the fact that these other companies are mostly ideas of companies abroad. He mentioned, "*let's say, I thought I was taking inspiration from BreadFast (an Egyptian food delivery company), my inspiration is not actually from BreadFast. It's from JustEat (a Dutch food delivery company) because BreadFast has in some way taken inspiration from something outside [JustEat].*" Jørgensen touched upon this point when he explained the Foucauldian view on power relations and power as a force. His view was that power should not be a property that is possessed by certain individuals that they exert over others.[107] And in this case, innovation and knowledge is power that is being directly and indirectly exerted over entrepreneurs and the stakeholders of innovation in Egypt.[108] Though human beings share similar problems around the world, the choice to look at the outside problems and take its solutions to apply it for the context of the inside, is not always undesirable. On the contrary, knowledge transfer is essential for human development and for the creation of a productive force.[109] However, the issue lies at conceptualizing innovation in limited ways and not making other ways accessible culturally, politically, socially, and even industrially. The availability and support to other ways of innovation that looks at the societal needs and the cultural context are indispensable in the innovation process.[110]

[107] Marianne Jørgensen, Louise J. Phillips, "Critical Discourse Analysis,"
[108] The power relation is noticed in multiple interviews as some participants would talk about Western companies in a manner of fascination and admiration. They look up to these companies and try to reach out to them at times for support, but they do not always get a reply back. A participant was going on a visit in Silicon Valley in the US and the way he was describing their ideas showed the power relations.
[109] Gilbert, Myrna, and Martyn Cordey-Hayes. "Understanding the Process of Knowledge Transfer to Achieve Successful Technological Innovation." Technovation 16 (6): (1996) 301–12
[110] Alana Corsi et al, "Technology Transfer Oriented to,"

While conducting the interviews, an observation that occurred was the connection and relationship between Western innovators and Egyptian entrepreneurs. Edward Said's Orientalism achieved the existence of radical differences between the Orient and the Occident.[111] Thus, in ontological terms, there is a fundamental difference between the cultures of Egypt and the West, as well as difference in the people themselves. This ontological difference entails that the type of conceptual instruments and methods, sociological concepts, and ideological distinctions that are used to understand the West, are sometimes irrelevant and inapplicable to the East.[112] Although it is true that this ontological difference is alive and well, it seems as though conceptual instruments are not always irrelevant and inapplicable. Imported innovations, even though they are imported due to certain power relations that are outlined by the supremacy of Western innovations, do work and in often cases thrive.[113] However, just because Western innovations work, coming up with new innovations and encouraging creative activities should be relevant and applicable. In Said's words, "the objective is not for the Arab world to shake off its dependence altogether, but to alter and improve its circumstances, terms and *modus operandi*, in the direction of a more genuinely equal and balanced relationship."[114] As a result, Said blamed the West for how it manages its affairs with the East. He also criticizes the Western Middle East experts who advise the policymakers as he claims that these individuals have failed to renounce their Orientalism ideologies.[115] Said provides a valuable warning to the Orientalism victims and subjects about the dangers of following the Orientalism styles and structures. He also warns against the temptations

[111] Said, Edward, "Orientalism,"
[112] Sadik J. al-Azm. "Orientalism and Orientalism in Reverse." In Is Islam Secularizable? Challenging Political and Religious Taboos, 27. Gerlach Press, (2014) p. 46
113 This realization came from the interviews as all of the participants claim that their companies are successful and growing in revenue.
[114] Said, Edward, "Orientalism,"
[115] Ibid.

of this type of thinking, giving it the name of self-orientalism.[116] It is possible that with the dominance of Western innovations and technologies, Egyptians have fallen into the trap of self-orientalism when it comes to the dependency on Western Innovations. One possible implication to this might be falling into the trap of Taqlid which was discussed by al-Alwani.

As an example of how Taqlid was not the only method used in the Arab Muslim world, in his study of pre-oil Oman village technologies, Roderic Dutton mentions the concept of Aflaj, which is a crop irrigation system unique to Oman that involved the design and operation of a horizontal gallery of water canals that placed the community's needs and culture at the centre of it.[117] This innovation displayed the shared responsibility for water distribution among the community and their social relations. Dutton explores the cultural significance of such an original innovation. He claims that using Aflaj had a "profound set of economic, social and environmental values to the community," and the use of local materials "created multiple linkages in the social networks."[118] However, with the rapid growth of the oil economy in the Gulf region – a western discovery – there was no time, urge, or motivation to keep investing in the Aflaj, resulting in the demise of the innovation. An analysis of a certain innovation's socioeconomic and cultural context, how it is created, used, or discontinued, and especially its locality, should serve as a way of thinking and conducting innovation. We can ask questions about how skills, material, and usage are intertwined by studying innovation cultures. Another example of irrigation innovation in the Muslim Arab world is the concept of Foggara. A foggara is a system that moves water from one place to another

[116] Ibid.
[117] Dutton, Roderic W. "The Impact of Oil Wealth on Traditional Technologies in Rural Oman." In Technology, Tradition and Survival: Aspects of Material Culture in the Middle East and Central Asia, London: Cass, (2003): 162.
[118] Ibid.

through an underground aqueduct.[119] This ancient technique was used in various societies across the Arab world, including Algeria and, Iraq. Without evaporation, the water can be transported across vast distances. The advantages of a Foggara is its ability to withstand natural disasters such as floods and earthquakes, and it can also be used against deliberate destruction of war. Also, it's insensitive to the effects of precipitation, which allows it to deliver a steady flow over time. In 2009, a survey was conducted in the region of Iraq's Kurdistan to determine the status of the country's Foggara systems. Out of 683 systems, only about a hundred were still active in 2004, and only 116 in 2009.[120] The decline of these systems can be attributed to the neglect and abandonment of the innovation and trying to develop it.

It could be viewed that the dependency on Western innovations is a byproduct of the capitalistic world economy.[121] It relates to the domination of western innovation, and it leaves developing nations with no choice but to participate in this capitalistic globalized chain. This domination could cause a complacency effect on developing nations where, Egyptians in this case, might not have room to innovate because there is no room to innovate.

Creative Activity in innovating

Innovators are viewed as experimenters, entrepreneurs, and leaders as they are an element in the process of change, and they are largely considered agents of change. The reference to change has shifted to a meaning of originality as it can be defined by Torsten as the introduction of a "hitherto unknown element . . . say, for example, a new technical device, a new way of allocating

[119] Boualem, Remini, Achour Bachir, and Kechad Rabah.. "The Foggara: A Traditional System of Irrigation in Arid Regions." GeoScience Engineering 60 (2): (2014) 30
[120] UNESCO:Water shortage fueling displacement of people in northern Iraq, UNESCO study finds Archived 2009-10-19 at the Wayback Machine, October 2009
[121] Janeway, W. (2012). Where is the state? In Doing Capitalism in the Innovation Economy: Markets, Speculation and the State (pp. 211-231). Cambridge: Cambridge University Press.

social roles, or a new cultural manifestation"[122] Despite the various definitions of innovation, creativity is still regarded a word, a sleeping concept. It is not talked about in scientific studies or in the literature about innovation nor invention.[123] Instead, it is regarded as a concept that is taken for granted. For instance, creativity does not have an indication nor connotation of the act of creating something new. Hence, innovation started to be described in terms of originality, in the sense of it being the 'first'. Creativity, on the other hand, started to refer to the outcome or the result of a certain creative act that is described as mysterious, or how it frequently refers to the market: combining factors of (industrial) production or activities.[124] In general, being creative is often a synonym for change or novelty. It was essential to ask the interviewees about creativity and how they view creativity since it is an important element in the process of innovation. However, some of their views on creativity as an element for innovation was surprisingly secondary to their work.

Although the factors of innovating in the Egyptian technology sector are diverse, as discussed above, it seems that creativity, which is considered an essential element for innovating is missing or lacking in the Egyptian context. The participants viewed creativity as element that is not measurable, and when running a start-up or managing a product, the workers need measurable variables that they can analyse which, in their view, is not applicable to creativity. Instead of dwelling about coming up with a creative solution to a problem that exists in the society, the workers would prefer to look outside and replicate an already existing idea somewhere else. One of the participants explained this when asked whether he finds a certain idea of a start-up creative

[122] Hagerstrand, Torsten, "The Diffusion of Innovations," in D. L. Sills (ed.), International Encyclopedia of the Social Sciences, London/New York: Macmillan: (1972) p. 174
[123] Kell, Harrison J., David Lubinski, Camilla P. Benbow, and James H. Steiger. "Creativity and Technical Innovation: Spatial Ability's Unique Role." Psychological Science 24, no. 9 (2013): 1831–36.
[124] Joy, Stephen. "Innovation Motivation: The Need to Be Different." Creativity Research Journal. Informa UK Limited, (2004)

or not, he said, "*Well it is very creative, but let's be honest, it's already somewhere else, right? Because if you basically have come up with it, I would say it's very creative. But if you're basically trying to localize a version that was there somewhere in China or somewhere in Brazil then it's a different story."* Another participant said, "*You can do something that is traditional in a different time and it becomes creative just because it's a different time. So, creativity is really hard to measure… Ultimately, I think you have to measure and start with how much money this [idea] can make."* The aim for innovating here is not to come up with a novel product or service that tackles a certain problem in the society, rather it becomes about commercializing an already existing idea and introducing it to the society. It is evident that this way of innovating, that does not necessarily include creativity at its core, is the dominant way of innovating in Egypt. The focus becomes on how to efficiently build a business that brings monetary value and solving an issue or a need in the society as a by-product.

Schumpeter describes this exact phenomenon and claims that adopting an already existing idea in some place and applying it in another place is much more likely to succeed if the improvement on the original innovation is robust.[125] He describes it in a way where he says that the imitators need to become innovators themselves. He argues that "one (important) innovation tends to facilitate (induce) other innovations in the same or related fields. In this way, innovation-diffusion becomes a creative process, in which one important innovation sets the stage for a whole series of subsequent innovations, and not the passive, adaptive process often assumed in diffusion research."[126] Applying this to the case of Egypt, the systemic interdependencies between the idea that is developed abroad versus the same idea being induced in the Egyptian market implies that innovations tend to be malleable if performed in a proper way. The process of innovation, as

[125] Schumpeter 1939, pp. 100-101
[126] Ibid.

suggested by Vernon, matters most at the early stage, in which there existed many different ideas of the innovation. However, once that idea turns into a product or a service, the aim here becomes on innovating the process, rather than exert energy and time in coming up with a creative idea. And that seems to be how it works in the Egyptian high-tech sector, as it is evident that there is a lot of hard work being put into building a product or a service, but this effort is rather invested in the process of transferring the knowledge rather than producing new ones. Hence, with a big market like Egypt (estimated at $200 billion US dollars) changes in the competitive conditions usually initiate this transfer of knowledge and technology from the innovator to a country with a large market and a low cost, like Egypt.[127] Thus, it could be viewed that Egyptians working in the high-tech sector emphasize how big the Egyptian market is, and have this belief that any idea that worked abroad has the ability to thrive in Egypt. So, it becomes easier for them to put effort in researching a successful innovation that relates to the Egyptian context in one way or another. One participant explained this phenomenon when asked about the inspiration behind his start-up, he said" *I think to start off, inflation and affordability [are] a very big problems in our region, right? you have inflation rates now higher than ever seen before. Last month, it was around 14% compared to 3% the month before in Egypt. And I think the whole world is seeing an increase in inflation, while at the same time, GDP per capita is quite low. Egypt [as an example] on average, $3,600 per person versus somewhere like China or Brazil where it to be around $10,000 in Brazil for example. So, kind of both constraints, put a pain on the Egyptian or the citizen in our part of the world…. As an example, A lot of the traditional e-commerce players have left a lot of people behind. Your Amazon, your Jumia, your Noon, the typical e-commerce culprit have a very distinct type of experience, where you sign up on their platform in a specific way. Yet most of the people*

[127] Maged Mandour, "Egypt's Market Free Capitalism," Carnegie Endowment International Peace, (2022)

online in the middle east, or in Egypt specifically, are only able to use WhatsApp and Facebook. You know, 50 million people are online in Egypt, only 5 million have command of setting up an account on Amazon and are able to discover using their methods. From here, we've really looked at inspiration from abroad and we've seen successful cases of social commerce companies, in China and Brazil, crack social media selling and integrating them into the apps. So honestly, we got some inspiration from there, like companies like Pinduoduo or Facily in Brazil and we tried to match that inspiration with treating the problem we're seeing in the middle east, and we basically kind of created this platform to fill that gap."

Motivation for innovation

There are multiple motives that can exist for an individual to pursue innovation. One of them is described by Stephen Joy as: the need to be different where he believes that individuals are compelled to make a decision between two different approaches. Either they choose a consistent approach or an innovative one, and this is usually based on the degree and level of the motivation for innovation. According to social learning theory, the motivation for innovation is determined by the expectancy that this innovation will produce reinforcing outcomes, and the presence of the need to engage in different behaviours. The need to be different was identified as a distinct personality trait that individuals exhibited when it came to their desire to engage in behavioural variation or creating change. During the interviews, it was noticed that the topic of creating change and solving societal issues were elements the workers think about and mention throughout the interview. However, an observation was that the motivation for innovation is mainly monetary rather than the need to make a change. It is not to be mistaken that they do not seek to solve issues with their ideas, in fact, most of them when describing their work, they use phrases like "we saw a problem," or "a pain-point that we noticed in the market was...". However, the need to be

different, nor the need to be creative are top priorities in their work; we see that their business focused discourse, profit, revenue and scalability are their main motivators. A motive to pursue originality is not synonymous to success in one of the participant's opinions, he mentioned, "*I don't think that the originality of an idea of a start-up is that important to be honest, I think we look at numbers not who has the best idea, so basically I would rather have a start-up that is growing and making revenue and not one that is creative or original but not getting traction or being noticed.*"

Although the need for change might not have been on the top of the list of most participants; one participant offered an alternative view on the motives for innovation. He viewed societal problems in Egypt, although not unique, but do require a motive to solve them. He supports this claim by saying, *"something that drives you as an entrepreneur is when you go out there and you see a problem. And the problem is really clear, and you feel that you're not just observing the problem, but you want to be part of the solution. This is a problem that I'm passionate about and it's going to be a core part of my mission and I want to solve it. so, I think for me that problem with equal access to education [his start-up idea], And able to access information, something around education opportunities. Something that I went through first-hand as a problem, while deciding where and what to study and where to be able to access that information"* In the literature, the need for solving problems is related to people with a very high need to be different, as they tend to focus on the quality of their ideas and develop them more persistent.[128] Even when encountering neglect or disapprobation they are likely to persist in their efforts of pursuing creative activities. This interpretation contrasts, yet differs, with that of another participant who claims that the motivation for innovating is related to the need for a better social status in the community. He mentioned, "*Recently what I see is that the entrepreneurial scene with all the propaganda on social*

[128]Joy, Stephen. "Innovation Motivation: 326

media and the nice moments you see and the shiny smiles and the big forums and the millions of dollars being raised and the thousands of likes on posts, attracts talents due to the glory they believe will be gained from the social perception of their communities specially with the inflated titles and unrealistic salaries. Yet a lot of them create nice things and are successful" This view contrasts with that of Stephen Joy in the sense that it tackles the highly motivated people and their ability to create and innovate, but it differs in the type of motivation and whether the source of such motivation is money and status oriented or based on the need to create positive change.[129]

Another driver for innovation that was observed across multiple interviews, specifically from the founders and co-founders of start-ups, is the responsibility to provide economic opportunities for the people around them. When asked about what inspired him to initiate his start-up and continue putting effort in it, one co-founder mentioned, "*I find a lot of fulfilment in generating economic opportunity, both for myself and for those around me. So, like nothing, nothing feels better than feeling that in 17 months you are capable of providing economic opportunities for more than 40 people directly. That's currently the size of [his start-up]. Moving them from pay check to pay check. Like you feel like you're contributing to putting bread and butter on people's plate and I think that is something that at least where I come from, coming from a developing country, is something that is extremely fulfilling and is of very high value."* This view can be explained through Magnus Holmén's research that aimed to explain the various processes involved in economic transformation by developing a new concept called innovation opportunities.[130] Using Schumpeterian views, Holmên defined innovative opportunities as ''the possibility to realize a potential economic value inherent in a new combination of resources and market needs, emerging

[129] Joy, Stephen. "Innovation Motivation:" 314
[130] Holmén, Magnus, Mats Magnusson, and Maureen McKelvey. "What Are Innovative Opportunities?" Industry & Innovation. Informa UK Limited, February (2007)

from changes in the scientific or technological knowledge base, customer preferences, or the interrelationships between economic actors''[131] He explained that innovative opportunity consists of three conceptual elements for the innovator to act upon and realize their idea. These three elements are (1) an economic value for someone; (2) a possibility that the resources needed to realize the idea (innovation) can be mobilized; (3) a possibility that at least some part of the generated economic value can be appropriated by the actor pursuing the opportunity.[132] In the cofounder's case his need to provide economic value for someone and for himself is a driver for innovation and for the continuation of it.

CONCLUSION

The word innovation has existed ever since humanity started, and that word has had different meanings throughout history. It has gone through many changes when at times it was considered a sin or heresy to a definition that embodies prosperity and growth, it rather continuously shifts from having a negative connotation to a positive meaning.[133] The aim of this research is to discover what innovation means to Egyptian workers in the technology industry through a qualitative discourse analysis, trying to tap into their concept of innovation by conducting in-depth interviews using both inductive and deductive approaches. There exists a vast pool of literature on the concept of innovation that looks at it from a commercialization, scalability and technology point of view, leaving out other attributes of the concept. The research tried to make sense and discover the attributes that might be missing from the concept of innovation in Egypt. Knowledge production, which is viewed to be a successor of innovation, has been dominated by Western influences in which legitimate knowledge became the synonym of Western knowledge and the legitimacy of

[131] Ibid.
[132] Ibid.
[133] Godin, "innovation contested," 12

any other sort of knowledge became questioned.[134] The West has succeeded in imposing a monolithic world-view on innovation that gave them control over knowledge production and transfer. Western culture, which is embodied with consumer culture, has very purposefully created irrational expectations that innovation must at all times be based on turning inventions into commercialized products or services. However, it becomes clear that this definition stems from a novel interpretation to the concept of innovation and is not the sole one for it. The concept of innovation then becomes kind of emblematic of a larger cultural misconception that catching up to the West is the way forward.[135]

In applying a Critical Discourse Analysis, this paper has contextualized a conceptual analysis generated by in-depth interviews to discover the meaning of innovations to Egyptians. Not only has this research studied the various definitions of the concept of innovation existing in the literature, but it has also expanded on literature that considers innovation as a concept that has many different meanings. After coming up with a working definition for the concept, the research analysed the interviews to uncover the reality of innovation in the Tech industry in Egypt. Three elements that are related to innovation were observed and chosen to guide the analysis, which are, creative activity, Western influence, and motivation for innovation. The first observation regarding the existence of some sort of creative activity, an element that is often associated with innovation, has been viewed as a non-essential element during the interviews. In the literature, creativity is often a synonym for change or novelty, however, originality being associated with being the first started to be a way to describe innovation. In the interviews, it was observed that originality and creativity are not on the priority list of the workers in Tech industry in Egypt. Instead, the effort is

[134]Francis Adyanga Akena, "Critical Analysis of the Production ofWestern Knowledge and Its Implications for Indigenous Knowledge and Decolonization," 'University of Toronto, (2012)
[135] Godin, "innovation contested," 12

put in researching 'successful' innovations abroad and transferring them to the Egyptian market, a market that is valued at $200 billion dollars.[136] The big size of the market, plus a well-researched plan can thus support workers to 'imitate' innovations rather than create something original. The concept of imitator has been coined by Schumpeter, who argues that transferring innovations or technology from their origin to a different place can be successful if the original innovation proved its strength and robustness. This argument seems to fit well with the Egyptian reality, where imitating effective innovations abroad has proved fruitful as they both tackle a societal issue as well as generate revenue. Moreover, this process of imitating does not necessarily involve high levels of interacting with others, so the element of the social process that should exist at the early stages of innovation is replaced with researching innovations from abroad. This is not to say that these workers do not interact with others, on the contrary, they actually do spend considerable amount of time interacting with each other and learning from each other, but they do not seem to interact with a wider audience that is beyond their "Tech bubble".

Having discussed how creative activity is an element of innovation, the second element that has been observed is the Western influence on innovation in Egypt or rather influence from abroad to be more specific. The act of imitating an innovation and the deprioritizing of creativity and originality has led to a trend of looking abroad for inspiration. The rapid transfer and diffusion of Western technologies all over the world, has inspired people to look abroad and compare their realities with each other with the aim of elevating the living standard. In this process, Egyptians found it more efficient to look abroad for ideas that would suit their reality and context and adopt them. This adoption, however not easy, seems to be effectual as the probability of the market to embrace this innovation is high because of the big market size and the openness to new

[136] Maged Mandour, "Egypt's Market Free,"

technologies that solve societal issues. The issue here lies at how the indices that are used to define the concept of innovation are coined by Westerners to capture what is important to them and this definition has become accessible to them because it suits their reality. However, if a woman in rural Egypt has some sort of an original idea for domestic or agricultural work, it is very likely that she will just use her idea for herself. This woman will most probably not go ahead and commercialize her idea because the way that innovation is conceptualized does not fit her paradigm. This has the possibility of creating dissatisfaction given that there's only one way to innovate, meaning not everyone will innovate. Hence, other ways should also be accessible culturally to Egyptians, in the same way that the western concept is accessible to them, in order to try and tackle unique local issues.

The third and final observation elucidated the motives for innovation. The literature regarding the motives for innovation is scarce, and it mainly focuses on organizational innovation rather than the bigger scope of it. Nevertheless, this research has tapped into three main motives that stimulate innovation in the Egyptian tech industry. The first is the monetary value of the innovation, as workers who has certain entrepreneurial skills and ambitions, seek to research ideas to generate profit. It is observed that most start-ups focus on the mobility and food & beverages industries and try and offer digitized solutions, as these industries are the ones with the biggest market.[137] Hence, workers in the tech industry mostly prefer to work in these industries as they have proven their potential for growth. The second motive is the need for societal impact and change. Although it might not be the main motive, but founders of start-ups do have the goal of solving a problem or relieving a pain point on their mind. The third and final motive is the journey of success. Success and entrepreneurship have become marketed to us on a daily basis, so young people who do not

[137] This is from the EU's "The Food and Beverage Market Entry Handbook: Egypt: a Practical Guide to the Market in Egypt for European Agri-food Products and Products with Geographical Indications"

aim for working for someone tend to put effort into starting their own Tech start-up. Being an entrepreneur or a founder of a start-up has acquired a certain social status that is put in higher regard. The social values of entrepreneurship are largely determined by the people's perception of the environment that allows people to start their own business and whether this environment stimulates entrepreneurial activity.[138] In Egypt, it is observed that innovation and entrepreneurship are being encouraged both by the public and by the government, however, what is encouraged the scalability of innovations, rather than innovations that tackle local context in a specific way.[139] Nevertheless, these entrepreneurs have their own personal traits that dictate what motivates them to innovate. It was shown that the opportunity to provide employment and economic opportunities to others was something that was extremely fulfilling. The chance to elevate their developing economy and fighting existing economic challenges is inspiring to them.

This research aimed to analysing the concept of innovation in the Egyptian Tech sector, and how people affiliated with this sector understand and apply the concept of innovation. The research findings suggest that is Egyptians view innovation from a practical way of trying to commercialize and scale ideas to mainly generate profit, and solve a societal issue as a by-product. For them, it is a practical concept that does not require originality nor creativity, but rather deep understanding of the market, and working on importing a successful innovation from abroad that could fit the needs of the market. The concept of innovation to Egyptians is highly influenced by Western ideology of technology as the solution to all societal issues. Conventional innovations that involve looking deeply at the local context seems to be deprioritized by the workers. This definition that was gathered through the interviews differs from the working definition of this thesis that defined

[138] Pinkovetskaia, I., Arbeláez-Campillo, D., Rojas-Bahamón, M., Novikov, S., & Veas Iniesta, D. (2020). Social values of entrepreneurship in modern countries. Amazonia Investiga, 9(28), 6-13.
[139] This is an observation from the website of Ministry of international cooperation of Egypt where it encourages technological innovation and boasting about how Egypt is becoming a tech hub

innovation as “an inherently social process, requiring interaction with others, that involves creative activity for knowledge creation and diffusion of existing knowledge.” The difference here lies at how existing knowledge is transferred and diffused from its origin to Egypt is successful. However, the creation of novel knowledge is scarce and one reason could be the absence of treating innovation as a social process that involves interacting with others to pin point societal issues to come up with solutions.

8.1 Way forward

History have shown that no nation stays on the top forever. Individual states rose and fell over time so this puts forward the idea that innovation is essential, as well as inevitable. In his analysis, On Barak draws parallels between the various forms of modernization and the discussion about them over the past decade. For instance, in 1995, Andrew Feenberg used the term "alternative modernity" to describe Japan's path to the twentieth century. As Yoav Di-Capua argues, it is time to break away from the conventional narratives about progress and modernity.[140] Through a different lens, Arabs can examine history without regard to what the West constitutes as standard. Deviating from this Western standard could allow Arabs to gain a deeper and different understanding of innovation. Such a shift could also encourage normal Arabs to explore their creative efforts in fields outside of technology, fields that are customized to local needs. Arab innovators and scholars need to start understanding the asymmetry in what Di-Capua calls “the technological shaping of society and the social shaping of technology.”[141] By understanding the cultural perspective that is specific to a certain place and time, Arabs could have the ability to separate and break free from the habit of “considering technological landscapes and technological cultures as two clearly separate areas of study, and start recognizing their interconnectedness,

[140] Di Capua, “Common Skies, Divided Horizons.”
[141] Ibid.

oscillation, and interdependence," as El Hariry puts it.[142] An example of a field to tap into and show originality and innovation is the agricultural field. For centuries, agriculture has been the center of economic and social life in the Arab Muslim world. It has been a vital part of the region's development, with diets mainly consisting of cereals and livestock as well as fruits and vegetables. And due to its relatively arid climate and limited water resources, the region has found it necessary to become a center for both modern and ancient agricultural innovations. We have seen the example of Aflaj in Oman and how an innovation that was rooted from a cultural aspect could have a direct impact on the community. And we have also seen the example of the Foggara as an indigenous innovation that has been used for centuries and discontinued out of negligence. Arabs have a chance to become leaders in agricultural innovations and become a robust global food provider in the face of climate change and global population increase.

[142] Shorouk El Hariry, "On Our Own Terms: Towards," p. 249

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